



STRUCTURAL STEEL AUDIT REPORT #2:

CHINA CONSTRUCTION NZ LTD (CCNZL)

Prepared for:
CHINA CONSTRUCTION NZ LTD

By:
SOUTHERN QA LTD

Date:
20 July 2018

Robert M Penney & Brendon J Isherwood

Southern QA Ltd

20 July 2018

REVISION	DATE	NOTES	DISTRIBUTION
0	20-07-18		John Cheng

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1. INTRODUCTION

China Construction New Zealand Ltd have engaged Jinggong Steel International (JSI) as their sub-contractor to fabricate the structural steelwork for the Customs Residential project.

As part of the due diligence process requested by the Auckland City Council, Southern QA Ltd (SQA) were engaged to travel to China and carry out an audit/review of the manufacturing processes, quality control systems and supporting documentation JSI have completed on the Propping steelwork currently under construction.

The nominated Standards for compliance are NZS3404 and AS/NZS1554.1: 2014

The earlier report date 6 April 2018 detailed six recommendations based on the findings of the audit visit. This report summarises and confirms the actions taken by JSI and SGS China to implement these recommendations.

2. PREVIOUS RECOMMENDATIONS AND FOLLOW UP ACTIONS

Recommendations were made as below, and the follow up actions have been implemented as detailed under each recommendation:

1. The ITP must include further details identified in this report eg Weld procedure approvals, % MPI for GMAW process, maximum weld widths

A revised ITP has been submitted by JSI which includes the recommended changes. Specifically the ITP now includes a JGS hold point for weld procedure review (section E) and the required percentages for NDT (Section H). See Appendix A.

2. Weld procedures must be resubmitted and approved independently

PQR-ACR-5 and corresponding WPS-ACR-23 have been reviewed by Brendon Isherwood (SQA, CBIP SWI) and found to have the changes previously recommended. Other procedures have been supplied but not fully reviewed, other than to verify the recommended changes have been implemented.

3. Welder qualification certificates must record inspection report numbers for cross-checking

JSI have submitted sample WQT records which show the required test report numbers.

4. Visual inspections must be formalised and reported in accordance with AS3978.

JSI have supplied a sample VT report which lists most reporting data required by AS 3978. Some minor alterations will be discussed at the next audit visit.

5. Revised procedures for mechanical testing (SGS) and NDT (JSI and SGS) be submitted to SQA for approval, either by email or during the next audit visit by SQA.

SGS company policy prevents release of written procedure documents to outside parties. The revised procedures will be reviewed in person during the next audit visit. SGS have supplied a document attesting to the changes made. See Appendix B.

JSI have supplied revised procedures which incorporate all required changes.

6. Next visit by SQA to coincide with the first production run on primary steelwork

The date for this visit has not yet been set.

3. SUMMARY

The information which forms the basis of this audit report has been from documents supplied. The documents demonstrate that the earlier recommendations have been adopted by JSI and SGS. On this we have reasonable grounds to believe that the fabricator and the independent inspectors will be able to provide documentation which proves compliance of both the temporary propping steel structure and the permanent primary steel structure to the Specification and applicable AS/NZS standards.



Robert M Penney
DIRECTOR
Southern QA Ltd



Brendon J Isherwood
DIRECTOR
Southern QA Ltd

Appendix A – Revised ITP

D	Welding Consumables								
D.1	Visual inspection	100%	AS/NZS 1554.1 Certified by ship classification society <i>Grade 3 approval</i>	JGS to record inspection (JGS-QA/QC-WCI-Serial No.)	A	/	/	/	R
D.2	Review & check MTC of consumables	100%			A	/	/	/	
E	Welder/ Welding Procedure to compliance with AS/NZS								
E.1	WPQR approval	100%	AS/NZS 1554.1 Approval by SQA	ANNEX C PQR	A/H	Test/Pass	/	/	R
E.2	WPS approval			ANNEX D WPS	A/H	/	/	/	
E.3	Welder qualification approval	100%	AS/NZS 2980, ISO 9606-1	ANNEX E WPQ Certificates	A/H	Test/Pass	/	/	
E.4	Weld map	100%	AS/NZS 1554.1	JGS to record for welds map	A	/	/	/	R
F	Inspection of Elements & fabrication fit up								
F.1	Material Traceability	100%			A	/	/	/	
F.1.1	Mark Material ID (MID) after arrival in factory	100%	Manufacturing QA Plan	JGS to record for MID, MTC, Heat No, PID, EID (JGS-QA/QC-MTL-Serial No.)	A	/	/	/	R
F.1.2	Mark Part ID (PID) and MID after cutting	100%			A	/	/	/	
F.1.3	Mark Element ID (EID) after fit up	100%			A	/	/	/	
F.2	Fabrication and fit up	100%			A	/	/	/	
F.3	Check dimension after fit-up and before welding	100%	AS/NZS 1554.1 & AS/NZS 5131, Shop drawings	JGS to prepare Fit up inspection record (JGS-QA/QC-FIR-Serial No.)	A	/	/	/	
G	Welding Inspection								
G.1	Monitor welding process	100%	WPS/WPQ AS/NZS 1554.1, AS/NZS 5131, AS 3978	JGS to prepare Welding inspection record (JGS-QA/QC-WIR-Serial No.)	A	/	/	Select item	R
G.2	Check weld profile and sizes max. weld width (width of run) 20mm	100%	AS/NZS 1554.1, AS/NZS 5131, AS 3978		A	/	/	Select item	
G.3	Mark weld ID - WID	100%	Manufacturing QA Plan		A	/	/	Select item	
H	Weld Non-Destructive Testing								
H.1	Visual inspection for all welds	100% by JGS 15% by SGS	AS/NZS 1554.1 category SP table 6.2.2 & AS/NZS 5131 AS 3978	JGS to prepare VI report (JGS-QA/QC-WIR-Serial No.) SGS Report sample refer to Annex A	A/H	/	/	Select item	R & Random welding inspection
H.2	UT of full penetration butt weld < 8mm	100% by JGS 15% by SGS	AS/NZS 1554.1 category SP AS 2207 LEVEL 2	JGS to prepare NDT report (JGS-QA/QC-UT-Serial No.) SGS Report sample refer to Annex A	A/H	/	/	Select item	
H.3	UT of partial penetration butt weld > 8mm, check weld size	100% by JGS 15% by SGS			A/H	/	/	Select item	
H.4	MPI of full penetration butt weld < 8mm	50% by JGS 15% by SGS			A/H	/	/	Select item	
H.5	MPI of partial penetration butt weld < 8mm	50% by JGS 15% by SGS			A/H	/	/	Select item	
H.6	MPI of fillet welds	25% by JGS 15% by SGS	AS/NZS 1554.1 category SP AS 1171 Percentage is against total weld length	JGS to prepare NDT report (JGS-QA/QC-MT-Serial No.) SGS Report sample refer to Annex A	A/H	/	/	Select item	
H.7	MPI for the GMAW process	100% of the first major component or welding completed by an individual welder. If this complex drop to 25%			A/H	/	/	Select item	
I	Final dimension check								
I.1	Check all controlling dimensions	100%	AS/NZS 3404 & AS/NZS 5131 & Shop drawings	JGS to prepare Dimension inspection record (JGS-QA/QC-DIR-Serial No.)	A/H	/	/	/	R
J	Final inspection and Shipping inspection								
J.1	Inspection Release Note	100%	Manufacturing QA Plan	JGS to prepare Product release list (JGS-QA/QC-RLN-Serial No.)	A/H	/	/	/	R
J.2	Visual inspection before shipping		Manufacturing QA Plan						
<p>■ JGS-Jingdong Steel, SGS-Third Party Inspection Authority, SQA-Southern QA, NZ Steel QA Auditor, RBG-Robert Bird Group, CCNZ-China Construction NZ Ltd;</p> <p>■ MTC- MII Test Certificate, WPS-Welding Procedure Specification, WPQR-Welding Procedure Qualification Record, NDT-Non-Destructive Testing, UT-Ultrasonic Testing, MPI - Magnetic Particle Inspection, RM-Raw material</p> <p>H=Hold Point(organization to perform this check and it need to be successful in order to proceed to the next stage of the construction).</p> <p>A=Action Point(organization to carry out inspection).</p> <p>R=Review Point(organization to review the record/document to confirm acceptance).</p> <p>Random: Anytime, anywhere, the inspection party who has right to inspection the work, and has right to judge that the performer's behavior/outcome according to specification or not.</p>									
SIGNED BY JGS: HENG SUN			SIGNED BY CCNZL: JOHN CHENG			SIGNED BY SGS:			

Appendix A (Cont) – Revised ITP

D	Welding Consumables									
D.1	Visual inspection	100%	AS/NZS 1554.1 Certified by ship classification society Grade 3 approval	JGS to record inspection (JGS-QA/QC-WCI-Serial No.)	A	/	/		R	
D.2	Review & check MTC of consumables	100%			A	/	/			
E	Welder/ Welding Procedure to compliance with AS/NZS									
E.1	WPQR approval	100%	AS/NZS 1554.1 Approval by SQA	ANNEX C PQR	A/H	Test/Pass	/		R	
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E.4	Weld map	100%	AS/NZS 1554.1	JGS to record for welds map	A	/	/		R	
F	Inspection of Elements & fabrication fit up									
F.1	Material Traceability	100%			A	/	/		R	
F.1.1	Mark Material ID (MID) after arrival in factory	100%	Manufacturing QA Plan	JGS to record for MID, MTC, Heat No, PID, EID (JGS-QA/QC- MTL-Serial No.)	A	/	/			
F.1.2	Mark Part ID (PID) and MID after cutting	100%			A	/	/			
F.1.3	Mark Element ID (EID) after fit up	100%			A	/	/			
F.2	Fabrication and fit up	100%			A	/	/			
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J.2	Visual inspection before shipping		Manufacturing QA Plan			/	/			
■ JGS-Jingong Steel, SGS-Third Party Inspection Authority, SQA-Southern QA, NZ Steel QA Auditor, RBG-Robert Bird Group, CCNZ-China Construction NZ Ltd.;										
■ MTC-Mill Test Certificate, WPS-Welding Procedure Specification, WPQR-Welding Procedure Qualification Record, NDT-Non-Destructive Testing, UT-Ultrasonic Testing, MPI - Magnetic Particle Inspection, RM-Raw material										
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Appendix B – SGS Statement



To who may concern:

As for recommended actions raised by SQA for Residential Tower Project, please refer to reply as below by SGS.

1. SGS NDT report had included qualification of inspector and reviewer according to requirement from SQA.
2. SGS NDT test procedure has made revision according to requirement from SQA.
3. Test standards of AS 1391:2007 and AS 1544.2:2003 are mentioned in SGS mechanical test procedure, but not specified with details. For SGS lab it is material testing so what we shall follow is testing workflow and activities are in accordance with corresponding standards. Therefore, SGS lab will not revise mechanical test procedure.

All above procedures are internal QA documents which are not permitted to distribution outside of SGS by QA dept., so we will show SQA auditor next visit.

SGS-CSTC Standards Technical Services Co., Ltd.

19th Jul 2018

